

CUSTOMER NO.: 24498
Ser. No. 09/830,900

PATENT
RCA 89,269

Listing and Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

1. (Currently Amended) A data storage element having data stored thereon, the data being readable and processed by a reader device, comprising:

a substrate; and

a data track disposed on the substrate, the data track comprising a plurality of data sectors ~~readable~~ read by ~~[[a]] the~~ reader device coupled to the storage element, each of the data sectors being formatted in accordance with a first digital data standard and comprised of a control data portion and a payload data portion, each of the payload data portions including a plurality of data packets that represent a video program adapted to be decoded by the reader device in accordance with a digital television standard to generate an output signal, wherein

each payload data portion further includes an application header that has control information that is read and used by the reader device to allow ~~allows~~ the reader device to filter the plurality of data packets in the payload data portion on a picture by picture basis without decoding the video data in the plurality of data packets.

2. (Previously Presented) The data storage element according to claim 1, wherein each data sector corresponds to a program stream pack formatted in accordance with the DVD standard and the data packets correspond to ATSC compliant transport packets.

3. (Previously Presented) The data storage element according to claim 1, wherein the payload data portions further include a plurality of null packets that are inserted to ensure that an output bitstream generated using the plurality of data packets corresponds to a bitrate required by the digital television standard.

4. (Previously Presented) The data storage element according to claim 3, wherein the output bitstream generated using the plurality of data packets and null packets results in an 8 VSB transmission at 19.4 Mbps.

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5. (Previously Presented) The data storage element according to claim 3, wherein each control data portion includes an indicator field that includes data that enables the reader device to recognize the total number of transport packets contained in the respective data sector and whether each data packet is a null packet or a transport packet formatted in accordance with the digital television standard.

6. (Previously Presented) The data storage element according to claim 3, wherein the data sectors include a non-integer number of transport packets.

7. (Previously Presented) The data storage element according to claim 3, wherein the payload data portion includes an integer number of transport packets associated with I and P frames in accordance with the MPEG-2 standard.

8. (Previously Presented) The data storage element according to claim 3, wherein the application header includes a pointer that enables the reader device to recognize the location of the first whole transport packet in the program stream pack.

9. (Previously Presented) The data storage element according to claim 3, wherein the application header includes a flag that enables the reader device to recognize whether a transport packet associated with a picture start is contained in the program stream pack, and a second pointer that enables the reader device to recognize the location of the transport packet associated with the picture start in the program stream pack.

10. (Previously Presented) The data storage element according to claim 3, wherein the application header includes a second flag that enables the reader device to recognize whether a second transport packet associated with a picture end is contained in the program stream pack, and a third pointer that enables the reader device to recognize the location of the transport packet associated with the picture end in the programs stream pack.

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11. (Previously Presented) The data storage element according to claim 3, wherein the application header includes a first value that enables the reader device to recognize the number of B frames between anchor frames and a second value that enables the reader device to recognize the number of frames in a group of pictures.

12. (Previously Presented) An apparatus, comprising:

a source of a digital bit stream, the bit stream comprising a plurality of data packs, each data pack formatted in accordance with a first digital data standard and comprised of a control data portion and a payload data portion, each of the payload data portions including a plurality of data packets formatted in accordance with a digital television standard;

an encoder adapted to transmit an output signal in accordance with the digital television standard; and

a control unit coupled to the source and the encoder, the control unit receiving the digital bit stream from the source and transferring a second bit stream comprised of a plurality of the data packets that are compliant with the digital television standard to the encoder, wherein

each payload data portion further includes an application header having control information and the control unit is adapted to filter the plurality of data packets in the payload data portion on a picture by picture basis without decoding the video data in the plurality of data packets in response to the control information in the application header.

13. (Previously Presented) The apparatus according to claim 12, wherein each data pack corresponds to a program stream pack formatted in accordance with the DVD standard and the data packets correspond to ATSC compliant transport packets.

14. (Previously Presented) The apparatus according to claim 13, wherein the encoder comprises an 8 VSB encoder, and wherein the control unit recovers clock information from the digital bit stream to synchronize the operation of the 8 VSB encoder.

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15. (Previously Presented) The apparatus according to claim 13, further comprising an analog processing portion that processes the digital bit stream and provides a video signal (NTSC, S-VHS) that complies with an analog television standard.

16. (Previously Presented) The apparatus according to claim 12, wherein the control unit inserts a plurality of null packets to the second bit stream to ensure that an output bit stream generated in response to the second bit stream corresponds to a bitrate required by the digital television standard.

17. (Previously Presented) The apparatus according to claim 12, wherein each application header includes an indicator field that includes data indicative of the total number of data packets associated with the respective payload data portion and whether each data packet is a transport packet or a null packet, the control unit inserting null packets formatted in accordance with the MPEG-2 standard in the second bit stream in response to the indicator field.

18. (Previously Presented) The apparatus according to claim 12, wherein each data pack includes an integer number of transport packets associated with I and P frames in accordance with the MPEG-2 standard, whereby the control unit is able to determine the location of I and P frames in the bit stream in response to control information in the application header.

19. (Previously Presented) The apparatus according to claim 12, wherein the application header includes a pointer indicative of the location of the first whole transport packet in the respective data pack, the control unit determining the location of the first whole transport packet in the respective data pack in response to the pointer.

20. (Previously Presented) The apparatus according to claim 16, wherein the application header includes a flag indicative of whether a transport packet associated with a picture start is contained in the respective data pack, and a

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pointer indicative of the location of the transport packet associated with the picture start in the respective data pack.

21. (Previously Presented) The apparatus according to claim 12, wherein the application header includes a second flag indicative of whether a transport packet associated with a picture end is contained in the respective data pack, and a second pointer indicative of the location of the transport packet associated with the picture end in the respective data pack.

22. (Previously Presented) A method for transmitting a digital video signal, comprising the steps of:

receiving a digital bit stream comprising a plurality of data packs, each data pack formatted in accordance with a first digital standard and comprised of a control data portion and a payload data portion, each of the payload data portions including a plurality of data packets formatted in accordance with a digital television standard;

extracting the plurality of data packets from the digital bit stream and generating a second bit stream; and

providing an output signal encoded in accordance with the digital television standard in response to the second bit stream, wherein

each payload data portion further includes an application header having control information and

filtering the plurality of data packets in the payload data portion on a picture by picture basis without decoding the video data in the plurality of data packets in response to the control information in the application header.

23. (Previously Presented) The method according to claim 22, wherein each data pack corresponds to a program stream pack in accordance with the DVD standard and the data packets correspond to ATSC compliant transport packets.

24. (Previously Presented) The method according to claim 23, further comprising the step of recovering clock information from the digital data stream to synchronize the operation of an 8 VSB encoder.

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25. (Previously Presented) The method according to claim 23, further comprising the step of processing the digital bit stream and providing a video signal that complies with an analog television standard.

26. (Previously Presented) The method according to claim 22, further comprising the step of inserting null packets to the second bit stream to ensure that an output bit stream generated in response to the second bit stream corresponds to a bitrate required by the digital television standard.

27. (Previously Presented) The method according to claim 22, further comprising the steps of evaluating an indicator field in the application header to determine the total number of data packets associated with the respective payload data portion and whether each data packet is a transport packet or a null packet, and inserting null packets formatted in accordance with the MPEG-2 standard in the second bit stream in response to the data in the indicator field.

28. (Previously Presented) The method according to claim 22, further comprising the step of determining the location of I and P frames in the bit stream in response to control information in the application header.

29. (Previously Presented) The method according to claim 22, further comprising the steps of evaluating a pointer in the application header to determine the location of the first whole transport packet in the respective data pack.

30. (Previously Presented) The method according to claim 22, further comprising the step of evaluating a flag in the application header to determine whether a transport packet associated with a picture start is contained in the respective data pack, and a pointer in the application header to determine the location of the transport packet associated with the picture start in the respective data pack.

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31. (Previously Presented) The method according to claim 22, further comprising the step of evaluating a second flag in the application header to determine whether a transport packet associated with a picture end is contained in the respective data pack, and a second pointer in the application header to determine the location of the transport packet associated with the picture end in the respective data pack.

32. (Previously Presented) A method for transmitting a digital video signal, comprising the steps of:

receiving a digital bit stream comprising a plurality of data packs, each data pack formatted in accordance with a first digital standard and comprised of a control data portion and a payload data portion, each of the payload data portions including a plurality of transport packets;

extracting the plurality of transport packets from the digital bit stream and transmitting an output signal formatted in accordance with a digital television standard with the plurality of transport packets, wherein,

each payload data portion further includes an application header portion, and

filtering the plurality of transport packets in the payload data portion on a picture by picture basis without decoding video data in the plurality of transport packets in response to the application header portion.

33. (Previously Presented) The method according to claim 32, wherein the payload data portion includes null packets, and further comprising the step of determining the number of transport packets and the number of null packets in a particular payload data portion in response to the application header portion.

34. (Previously Presented) The method according to claim 32, further comprising the step of locating a start of the plurality of transport packets and null packets within the payload data portion in response to the application header portion.